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Scientific and Technical Subcommittee
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Draft report

VIII. Space weather

1. In accordance with General Assembly resolution 72/77, the Scientific and Technical Subcommittee considered agenda item 11, entitled "Space weather".

2. The representatives of Canada, China, Egypt, Germany, India, Indonesia, Italy, Japan, Mexico, Nigeria, Pakistan, the Russian Federation, South Africa and the United States made statements under agenda item 11. The observers for the European Union and the World Meteorological Organization also made statements under the item. During the general exchange of views, statements relating to the item were made by representatives of other member States.

3. The Subcommittee heard the following scientific and technical presentations:

(a) "NASA's Parker Solar Probe: the first ever mission to 'touch' the Sun", by the representative of the United States;

(b) "Space weather activities in Austria", by the representative of Austria;

(c) "COSPAR Panel on Space Weather: a forum for the realization of global weather road map goals", by the observer for the Committee on Space Research.

4. The Subcommittee had before it the following:

(a) Note by the Secretariat on thematic priority 4 (International framework for space weather services) (A/AC.105/1171);

(b) Report of the United Nations/United States of America Workshop on the International Space Weather Initiative: the decade after the International Heliophysical Year 2007 (A/AC.105/1160);

(c) Conference room paper submitted by the Rapporteur of the Expert Group on Space Weather containing a progress report on the work of the Expert Group, including in relation to UNISPACE+50 thematic priority 4 (International framework for space weather services) (A/AC.105/C.1/2018/CRP.14).

5. The Subcommittee noted that space weather, caused by solar variability, was an international concern, owing to its potential threat to space systems, human space flight and the ground- and space-based infrastructure upon which society increasingly relied. As such, it needed to be addressed in a global manner, through international

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cooperation and coordination, in order to be able to predict potentially severe space weather events and mitigate their impacts.

6. In that regard, the Subcommittee noted that space weather was addressed under UNISPACE+50 thematic priority 4 (International framework for space weather services) and noted with appreciation the work by the Expert Group on Space Weather of the Scientific and Technical Subcommittee as the implementation mechanism for that thematic priority.

7. The Subcommittee welcomed the recommendations contained in document A/AC.105/1171, in particular the need to establish an international coordination mechanism within the framework of the Committee on the Peaceful Uses of Outer Space that had a mandate to promote increased high-level coordination on space weather and to promote increased global resilience against space weather effects.

8. The Subcommittee noted the importance of being able to predict space weather accurately and the associated need for the participation of countries worldwide in space-based and ground-based measurements and forecast services. The Subcommittee also noted the importance of focused research that would lead to improvements in modelling and forecasting capabilities over time.

9. The Subcommittee also noted a number of national activities undertaken in space weather research, training and education to improve scientific and technical understanding of adverse space weather effects, with the aim of strengthening space weather resilience.

10. Some delegations expressed the view that activities related to space weather could have an impact on aviation and, in particular, could potentially interrupt high-frequency communications and satellite navigation. In that regard, the ICAO initiative of defining the establishment of selected global space weather information centres for actors in the aviation sector was noted.

11. The Subcommittee noted with appreciation the holding of a number of global conferences and workshops on space weather, including the flagship event under UNISPACE+50 thematic priority 4, namely the United Nations/United States of America Workshop on the International Space Weather Initiative held in Boston, United States, from 31 July to 4 August 2017, which had marked the tenth anniversary of the International Heliophysical Year and had provided an opportunity to recognize progress over the previous decade and to discuss strategies for future activities.

12. The Subcommittee also noted that an international workshop on space weather was to be held in 2019 to help raise awareness among Member States of the importance of the impact of space weather.

13. The Subcommittee noted that the ISWI Steering Committee had held a meeting on the margins of the session to discuss the ISWI instrument arrays and their status of operation and coordination, and the operational use of space weather data.

14. At the 884th meeting of the Subcommittee, on 2 February, the Rapporteur of the Expert Group on Space Weather presented the progress made by the Expert Group during the meetings it had held on the margins of the fifty-fifth session of the Subcommittee.

15. At those meetings, attended by more than 28 experts from around the world, the Expert Group had reiterated the importance of the note by the Secretariat on thematic priority 4 (International framework for space weather services) (A/AC.105/1171), in particular the need for a new international coordination group on space weather. That new group could deliver improved international collaboration and coordination for improved space weather services and ultimately enhance global resiliency against the adverse effects of space weather.

16. In that regard, the Expert Group presented a progress report (A/AC.105/C.1/2018/CRP.14), in which it recommended that the terms of reference for the international coordination group be proposed by 2019. It also recommended

that those terms of reference be further developed during an international space weather workshop in the third quarter of 2019, with the aim of presenting them to the Subcommittee in 2020 for final approval.

17. The Expert Group presented the following updated workplan for the period up to 2021, consistent with its existing mandate and the recommendations contained in document A/AC.105/1171:

(a) The Expert Group will review the space weather-related activities and workplans of relevant United Nations entities, including ICAO and WMO, and those of States members of the Committee and national and international organizations. In addition, the Expert Group will identify and assess its role in the global space weather effort, promote coordination and communication among those entities, and ensure that the efforts of the Subcommittee are complementary to its own;

(b) Recognizing the potential severity of the impact of space weather, the Expert Group will promote the increased involvement of member States in providing space weather monitoring, both from Earth and in space, and in developing, advancing, sharing and delivering space weather services;

(c) In relation to planning for the development of the proposed future international coordination group for space weather, the Expert Group will transmit the reports of the drafting committee to the Subcommittee, which will consider the recommendations of the drafting committee relating to future membership, the terms of reference and the mandate of the coordination group.

(d) The Expert Group will report annually to the Subcommittee with regard to its progress, important issues that have been identified and specific actions that are recommended, including those related to a possible future international coordination group for space weather. The Expert Group will also make a recommendation for its updated workplan.

18. The Subcommittee noted with satisfaction the work of the Expert Group, which had brought relevant entities together in order to mitigate the impact of space weather and had contributed to UNISPACE+50. In that regard, the Subcommittee recommended that the Expert Group continue its work, in accordance with the recommendations included in the Group's progress report (A/AC.105/C.1/2018/CRP.14).

XI. Long-term sustainability of outer space activities

19. In accordance with General Assembly resolution 72/77, the Subcommittee considered agenda item 14, entitled "Long-term sustainability of outer space activities", under the workplan contained in the report of the Committee on the Peaceful Uses of Outer Space on its fifty-fourth session (see A/66/20, annex II) and extended by the Committee at its fifty-seventh and fifty-ninth sessions (A/69/20, para. 199, and A/71/20, para. 137).

20. The representatives of Austria, China, Germany, India, Japan, Kazakhstan, Pakistan, the Republic of Korea, the Russian Federation, South Africa, the United States and Venezuela (Bolivarian Republic of) made statements under agenda item 14. A statement was made under the item by the representative of Argentina on behalf of the Group of Latin American and Caribbean States. During the general exchange of views, statements relating to the item were also made by representatives of other member States.

21. The Subcommittee had before it the following:

(a) Note by the Secretariat entitled "Guidelines for the long-term sustainability of outer space activities" (A/AC.105/C.1/L.362/Rev.1);

(b) Working paper by the Chair of the Working Group on the Long-term Sustainability of Outer Space Activities entitled "Outline for the report of the Working

Group on the Long-term Sustainability of Outer Space Activities" (A/AC.105/C.1/L.357);

(c) A non-paper by the Chair of the Working Group on the Long-term Sustainability of Outer Space Activities entitled "Possible General Assembly resolution on guidelines for the long-term sustainability of outer space activities".

22. In accordance with General Assembly resolution 72/77, the Working Group on the Long-term Sustainability of Outer Space Activities was reconvened, with Peter Martinez (South Africa) as Chair.

23. The Subcommittee agreed on the importance of the work being undertaken on the long-term sustainability of outer space activities. In that connection, it welcomed the fifth intersessional meeting of the Working Group, held in Vienna from 2 to 6 October 2017, which had been characterized by a spirit of cooperation and goodwill.

24. Some delegations expressed the view that the Committee and its Subcommittees had a fundamental role in addressing the long-term sustainability of outer space activities, as the issues demanded a multilateral approach and needed to be addressed at the international level.

25. Some delegations welcomed the first set of guidelines for the long-term sustainability of outer space activities (A/71/20, annex), as tangible progress by the Committee on the topic of the long-term sustainability of outer space activities and as a successful milestone that underscored the Committee's role in fostering international cooperation in order to ensure that all States could continue to benefit from the use of space in the long term.

26. Some delegations expressed the view that the successful completion of guidelines for the long-term sustainability of outer space activities strengthened the role of the Committee as the prime multilateral forum for the progressive development and codification of international norms and standards guiding the activities of States in outer space.

27. Some delegations expressed the view that agreement on a compendium of guidelines for the long-term sustainability of outer space activities should be reached by June 2018 and that completing a compendium in 2018 would represent an important deliverable by the Committee in the year in which UNISPACE+50 was celebrated.

28. Some delegations recalled the conference room paper submitted by the Group of Latin American and Caribbean States containing comments and proposed amendments to the updated set of draft guidelines for the long-term sustainability of outer space activities (A/AC.105/C.1/2015/CRP.19/Rev.1), and expressed the view that essential principles that should continue to guide the work of the Working Group on the Long-term Sustainability of Outer Space Activities included: (a) that outer space was the responsibility of all humanity and therefore must be explored and used responsibly for the benefit of all; (b) that outer space must be preserved for future generations; and (c) that outer space should be used only for peaceful purposes.

29. The view was expressed that a compendium of guidelines for the long-term sustainability of outer space activities would contribute to strengthening norms on conduct in outer space and ensuring that the international community could further leverage space and space assets for sustainable development on Earth for the benefit of humankind.

30. The view was expressed that any guidelines developed under the agenda item on the long-term sustainability of outer space activities should be in strict compliance with current legal regimes on outer space activities. The delegation expressing that view was also of the view that the guidelines should not be legally binding and should be applied on a voluntary basis, with each State being allowed to take measures in phases, in accordance with their domestic legal framework.

31. The view was expressed that it was important that the long-term sustainability of outer space activities be considered from both the technical and legal perspectives. The delegation expressing that view welcomed proposals made under UNISPACE+50 thematic priority 2 to address the interlinkages between the outcome of the Working Group on the Long-term Sustainability of Outer Space Activities and the treaties, principles and other instruments that comprised the international legal regime governing outer space activities.

32. The view was expressed that the Working Group should, when considering all proposals for guidelines, take into account the methods of work and all related issues listed in its terms of reference and methods of work (A/66/20, annex II).

33. The view was expressed that, when deciding on the modalities of work on guidelines for the long-term sustainability of outer space activities, all delegations were, in principle, in agreement that all participants in space activities, among other measures, had to approach responsibly the choice of methods and means for their space projects, in particular by keeping in mind the importance of avoiding emerging situations that could negatively impact the space activities of other States. The view was also expressed that that approach was in line with the provisions of the Outer Space Treaty and the recommendations of the Group of Governmental Experts on Transparency and Confidence-Building Measures in Outer Space Activities (A/68/189).

34. Some delegations expressed the view that outer space should be used exclusively for peaceful purposes and that all legal means should be sought to preserve outer space for such purposes. Delegations expressing that view also stated that it was essential for the international community to recognize that outer space should never be an environment where hostile activities could be initiated or developed, whether or not such hostilities included the deployment of weapons of any kind.

35. Some delegations expressed the view that the guidelines for the long-term sustainability of outer space activities should not become an instrument for countries that had traditionally managed space technology to impose restrictions on other States that aspired to develop and use space technology as a fundamental tool to improve the living conditions of their inhabitants.

36. The view was expressed that the adoption of any guidelines for the long-term sustainability of outer space activities should be based on the reality of the development of space technologies and applications, taking into full consideration the concerns of all parties, especially the needs of developing countries when participating in space activities and developing their space industries.

37. The view was expressed that the guidelines for the long-term sustainability of outer space activities highlighted the importance of international cooperation and technology transfer as an effective means of promoting research programmes and developing space sector capabilities.

38. The view was expressed that guidelines regarding international cooperation should fully embody the vision and spirit of equality, openness, inclusiveness and non-discrimination.

39. The view was expressed that the set of guidelines, similarly to any other legislative, normative or other regulatory documents, should not be frozen in their conception, but rather should be understood as remaining open to amendment or revision. The delegation expressing that view was also of the view that improvements to existing arrangements and new proposals on the resolution of problems would be warranted in the case of the appearance of new possibilities for the resolution of existing problems or the emergence of new challenges and, most importantly, that such proposals, if drafted using objective, well-defined and rational criteria, would lead to success.

40. At its [...] meeting, on [...] February, the Subcommittee endorsed the report of the Working Group on the Long-term Sustainability of Outer Space Activities, which is contained in annex [...] to the present report.